

Attorney's Docket No.:14580-020001

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of forming a contact to an underlayer or region of a device comprising:

forming a contact hole through a portion of the device including through a first barrier layer, the contact hole having sides which extend above and below the first barrier layer and having a bottom surface;

wet etching the contact hole;

forming a contact hole barrier layer of a barrier material in the contact hole, after wet etching the contact hole, thereby filling voids in the first barrier layer caused by the wet etching, the contact hole barrier layer being continuous between the sides and bottom surface of the contact hole;

etching the contact hole barrier layer on the bottom surface of the contact hole;

depositing a liner material in the contact hole to form a contact liner to promote subsequent filling of the contact hole; and

filling the contact hole with a conductive material.

2.-4. (Cancelled)

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5. (Previously Presented) A method according to claim 1, in which the barrier material of the contact hole barrier layer is Al_2O_3 or TiO_2 .

6. (Previously Presented) A method according to claim 1, in which the barrier material of the contact hole barrier layer is deposited using an atomic layer deposition (ALD) method.

7. (Original) A method according to claim 1, in which the device is a semiconductor device.

8. (Original) A method according to claim 1, in which the device is a passive device.

9. (Original) A method according to claim 1, in which the device is a capacitor.

10. (Original) A method according to claim 9, in which the device is an FeRAM.

11. (Withdrawn) A device including a contact to an underlayer of the device formed by forming a contact hole, forming a contact hole barrier layer of a barrier material in the contact hole, etching the contact hole barrier layer on the

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bottom surface of the contact hole, depositing a liner material in the contact hole and filling the contact hole with a conductive material.

12. (Withdrawn) A device according to claim 11, in which the barrier material is Al_2O_3 or TiO_2 .

13. (Withdrawn) A semiconductor device including a contact to an underlayer of the device formed by forming a contact hole, forming a contact hole barrier layer of a barrier material in the contact hole, etching the contact hole barrier layer on the bottom surface of the contact hole, depositing a liner material in the contact hole, and filling the contact hole with a conductive material.

14. (Withdrawn) A semiconductor device according to claim 13, in which the barrier material is Al_2O_3 or TiO_2 .

15. (Withdrawn) A capacitor including a contact to an underlayer of the device formed by forming a contact hole, forming a contact hole barrier layer of a barrier material in the contact hole, etching the contact hole barrier layer on the bottom surface of the contact hole, depositing a liner material

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in the contact hole and filling the contact hole with a conductive material.

16. (Withdrawn) A capacitor according to claim 15, in which the barrier material is Al_2O_3 or TiO_2 .

17. (Withdrawn) An FeRAM device including a contact to an underlayer of the device formed by forming a contact hole, forming a contact hole barrier layer of a barrier material in the contact hole, etching the contact hole barrier layer on the bottom surface of the contact hole, depositing a liner material in the contact hole and filling the contact hole with a conductive material.

18. (Withdrawn) An FeRAM device according to claim 17, in which the barrier material is Al_2O_3 or TiO_2 .

19. (Cancelled)

20. (Currently Amended) A method of forming a contact to an underlayer or region of a device comprising:

forming a contact hole;

forming a contact hole barrier layer of a barrier material in the contact hole;

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wet etching the contact hole after forming the contact hole barrier layer;

~~thickening the contact hole barrier layer by application of a second contact hole barrier layer~~ applying a second contact hole barrier layer on the contact hole barrier layer to compensate for any undesirable reduction in thickness of the contact hole barrier layer formed by the wet etching;

etching the contact hole barrier layer on the bottom surface of the contact hole;

depositing a liner material in the contact hole to form a contact liner to promote subsequent filling of the contact hole; and

filling the contact hole with a conductive material.

21. (New) A method according to claim 1, in which the barrier material of the contact hole barrier layer is Al_2O_3 or TiO_2 .

22. (New) A method according to claim 1, in which the barrier material of the contact hole barrier layer is deposited using an atomic layer deposition (ALD) method.

23. (New) A method according to claim 1, in which the device is a semiconductor device.

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24. (New) A method according to claim 1, in which the device is a passive device.

25. (New) A method according to claim 1, in which the device is a capacitor.

26. (New) A method according to claim 9, in which the device is a FeRAM.